

## Abstract of the Disclosure

A method manages traffic over a channel of a network connecting a sender end system and a receiver end system. The traffic includes multimedia packets. The channel is modeled as a queue having an associated queue occupancy. The times when packets are sent and the times when feedback messages are received are maintained in the sender end system. A time series of samples for a service time experienced by each packet sent is updated based on the total number of packets sent and the total number of feedback messages received. A queue occupancy for a next packet to be sent is then predicted based on the time series, and the next packet is sent according to the predicted queue occupancy.